

Prevalence of Bacterial Pathogen and its Antimicrobial Sensitivity in Hor Al Anz Area, Dubai for Skin Infection

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Abstract

Skin infections are common community complication which leads to significant morbidity, mortality, prolong hospital stay, and add to hospital cost also. The primary aim of this study was to identify the common pathogens isolated from selected community and to assess its sensitivity pattern. A total 120 laboratory report were collected from different pathologic laboratories. Pathogens *Staphylococcus aureus*, group A, Beta hemolytic streptococci, *Pseudomonas aeruginosa*, *Proteus* species sensitivity were compared with medical practitioner antibiotic medicines. Antibiotic Doxycycline was more sensitive against community pathogens.

Key words: *Staphylococcus aureus*, group A, *Beta hemolytic streptococci*, *Pseudomonas aeruginosa*, *Proteus species*

INTRODUCTION

Skin Infection:

The skin provides a remarkably good barrier against bacterial infections. Although many bacteria come in contact with or reside on the skin, they are normally unable to establish an infection. When bacterial skin infections do occur, they can range in size from a tiny spot to the entire body surface. They can range in seriousness as well, from harmless to life threatening [1-3].

Many types of bacteria can infect the skin. The most common are *Staphylococcus* and *Streptococcus*. Skin infections caused by less common bacteria may develop in people while hospitalized or living in a nursing home, while gardening, or while swimming in a pond, lake, or ocean[4-6]. Some people are at particular risk of developing skin infections. For example, people with diabetes are likely to have poor blood flow, especially to the hands and feet, and the high levels of sugar (glucose) in their blood decrease the ability of white blood cells to fight infections. People who are older, who have human immunodeficiency virus (HIV) or AIDS or other immune disorders, or hepatitis, and who are undergoing chemotherapy or treatments with other drugs that suppress the immune system are at higher risk as well because they have a weakened immune system[7]. Skin that is inflamed or damaged by sunburn, scratching, or other trauma is more likely to become infected. In fact, any break in the skin predisposes a person to infection[9,10].

Bacterial Skin Infection:

Cellulitis
Carbuncle
Furuncle
Folliculitis
Impetigo

OBJECTIVES:

The main objective of this study was to assess practices of antibiotic prescriptions at Community pharmacies with a focus on common Infection among all age groups in order to provide data for policy discussions aimed at improving quality of care and patient safety with comparative to laboratories sensitivity tests.

METHODS:

120 Laboratories data were collected from various laboratories from surrounding labs of Hor al anz, Dubai during the period of July 2013 to December 2015. The patients information, isolated pathogens and its sensitivity report were correlated from the laboratories data. The prescriptions were filtered by infectious diseases of Infection and number of particular antibiotic segregated and cross section against ABR (Anti-Bacterial Resistance) from laboratories data[11,12].

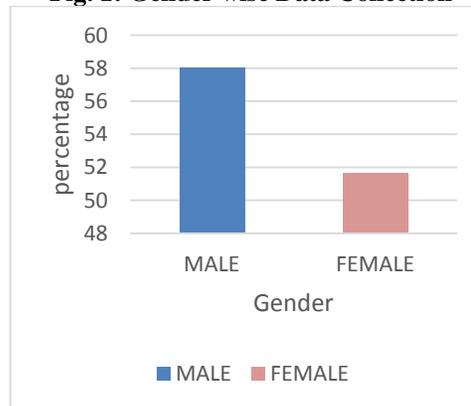
Antibiotic using in UAE:

The most commonly using antibiotics in UAE for outpatient department is Clindamycin, Doxycycline, Erythromycin and Tetracycline.

Gender Distribution

Total 120 laboratories data were included in this study. Of which, 58 (48.33%) patients were male and 62 (51.66%) patients were female (Fig.1).

Fig. 1: Gender wise Data Collection



RESULTS AND DISCUSSION

Prevalence of Pathogens:

Pathogens *staphylococcus aureus*, group A, beta hemolytic streptococci, *Proteus* species and *Pseudomonas aeruginosa* were isolated. Of all pathogens, *Staphylococcus aureus* (60) were more prevalent whereas group A- beta streptococci (52)

were moderately prevalent and *Pseudomonas aeruginosa* (5) and *Proteus* species (3) were least prevalent. Pathogens that are prevalent are summarized in (fig.2). However, most pathogens were prevalent in male than in female. Sensitivity and resistance pattern of pathogens to commonly used antibiotics are presented in (table 1) and showed in (fig. 3).

Fig. 2: Number of Pathogens (%)

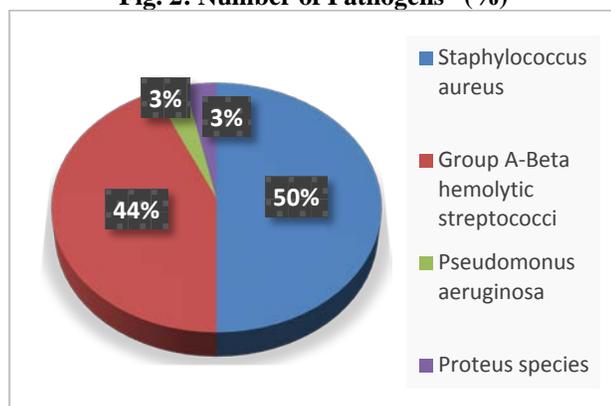
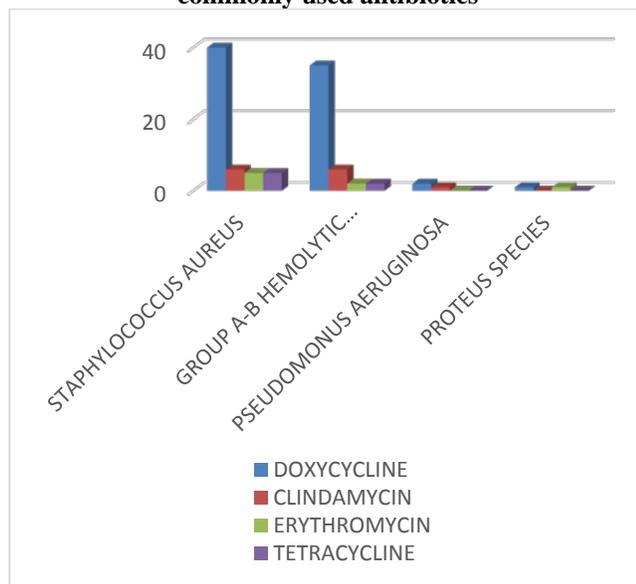


Table 1: Sensitivity and resistance pattern of pathogens to commonly used antibiotics

Antimicrobial	Staphylococcus aureus		Group a-b hemolytic streptococci		Pseudomonas aeruginosa		Proteus species	
	S	R	S	R	S	R	S	R
Doxycycline	40	1	35	2	2	1	1	0
Clindamycin	6	1	6	2	1	1	0	1
Erythromycin	5	1	2	2	0	0	1	0
Tetracycline	5	1	2	1	0	0	0	0

Fig. 3: Sensitivity and resistance pattern of pathogens to commonly used antibiotics



CONCLUSION

The present study was aimed to study the pathogens in particular community area and its sensitivity pattern. Study results showed the following (a) Pathogens are more prevalent in male than in female, (b) Of all pathogens, *Streptococcus Aureus* are more prevalent whereas, Group A-Beta hemolytic streptococci were moderately prevalent and *P.Aeruginosa* and *Proteus* species are least prevalent, (c) of all antibiotics, Doxycycline was sensitive to all pathogens in the study with low resistance profile.

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